



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,943	12/31/2001	Joon-Young Jung	123054-05005237	5261
23429 7590 05/09/2008 LOWE HAUPTMAN HAM & BERNER, LLP 1700 DIAGONAL ROAD SUITE 300 ALEXANDRIA, VA 22314				
EXAMINER				
EKPO, NNIENNA NGOZI				
ART UNIT		PAPER NUMBER		
2623				
MAIL DATE		DELIVERY MODE		
05/09/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/029,943

**Applicant(s)**

JUNG ET AL.

**Examiner**

Nnenna N. Ekpo

**Art Unit**

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Acknowledgment***

1. This Office Action is responsive to the remarks filed on March 09, 2008.

### ***Specification***

2. The abstract of the disclosure is objected to because it is a repetition of claim 1. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

3. Previous objection to the claim is withdrawn in view of Applicant's amendment filed on March 09, 2008.

### ***Claim Rejections - 35 USC § 112***

4. Previous rejections under 35 U.S.C 112 second are withdrawn in view of Applicant's amendment filed on March 09, 2008.

### ***Response to Arguments***

5. Applicant's argument, see pages 10-13, filed on March 09, 2008, with respect to claims 1-13 have been fully considered and are persuasive. The rejections of claims 1-13 has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-7 and 9-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over McGarrah et al. (U.S. Publication No. 2003/0026424) in view of Kuh (U.S. Patent No. 6,785,903).

Regarding **claim 1**, McGarrah et al. discloses a program converter for selectively receiving a digital terrestrial broadcasting transport stream (TS) or a digital satellite broadcasting TS, converting them into a corresponding digital cable broadcasting TS, and outputting the same, comprising (see cited portion, but not limited to paragraph 0009):

a protocol data extractor for demultiplexing the terrestrial broadcasting TS or the satellite broadcasting TS, extracting audio/video (A/V) data and program data from the terrestrial broadcasting TS, and extracting A/V data and data from the satellite broadcasting TS (see cited portion, but not limited to paragraph 0032, lines 1-7);

a protocol data converter for using the Program data or the Information data extracted by the protocol data extractor, and generating Program data of a corresponding digital cable television broadcasting standard (see cited portion, but not limited to paragraph 0062, lines 37-46);

a protocol data inserter for inserting the digital cable television broadcasting standard Program data generated by the protocol data converter into the A/V data extracted by the protocol data extractor through TS multiplexing, and generating a digital cable broadcasting TS (see cited portion, but not limited to paragraph 0028).

However, McGarrah et al. fail to specifically disclose PSIP/PSI and a system controller for checking states of the protocol data extractor, the protocol data converter and the protocol data inserter, and controlling their operation.

Kuh discloses PSIP/PSI (see cited portion, but not limited to col. 4, lines 8-20, col. 5, lines 17-32) and a system controller for checking states of the protocol data extractor, the protocol data converter and the protocol data inserter, and controlling their operation (see cited portion, but not limited to col. 4, lines 57-col. 5, line 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify McGarrah et al.'s invention with the above mentioned limitation as taught by Kuh for the advantage of properly reflecting a new transmit carrier frequency and channel number, thus preventing tuning problems with some digital television receivers due to incorrect PSIP table information and also for the advantage of maintaining the out-of-band service information.

Regarding **claim 2**, McGarrah et al. and Kuh discloses everything claimed as applied above (see *claim 1*). Kuh discloses the PSIP converter further comprising:

a TS receiver for receiving the terrestrial broadcasting TS or the satellite broadcasting TS, and transmitting the same to the protocol data extractor (see cited portion, but not limited to figs 2, 3, col. 4, lines 6-17 (satellite));

a TS transmitter for outputting the digital cable broadcasting TS generated by the protocol data inserter to the outside (see cited portion, but not limited to col. 4, lines 47-56)

PSIP/PSI (cited portion, but not limited to col. 4, lines 8-20, col. 5, lines 17-32).

McGarrahan et al. discloses a user interface for receiving information and control data needed for generating the data of the digital cable television broadcasting standard (see cited portion, but not limited to paragraph 0027).

Regarding **claim 3**, McGarrahan et al. and Kuh discloses everything claimed as applied above (see *claim 1*). Kuh discloses the PSIP converter, wherein the protocol data converter comprises:

- a table data manager for receiving the terrestrial broadcasting PSIP/PSI data or the satellite broadcasting SI/PSI data from the protocol data extractor, splitting them according to tables corresponding to the PSIP or the SI and the PSI, and extracting data for generating the digital cable broadcasting PSIP/PSI tables (see cited portion, but not limited to col. 1, lines 65-67, col. 2, lines 1-18);

- a common protocol data manager for using the data extracted by the table data manager (see cited portion, but not limited to col. 4, lines 29-32);

- a scheduler for outputting control signals corresponding to each table generation period of the digital cable broadcasting PSIP/PSI (see cited portion, but not limited to col. 2, lines 66-67, col. 3, lines 1-25); and

- a PSIP/PSI table generator for generating the digital cable broadcasting PSIP/PSI table by using the data input by the common protocol data manager according to the control signal output by the scheduler, and outputting the same to the protocol data inserter (see cited portion, but not limited to col. 5, lines 17-32).

McGarrahan et al. discloses the data input by a system manager through the user interface, and the data stored in a database to configure data needed for generating the digital cable broadcasting (see cited portion, but not limited to paragraph 0027 and 0060).

Regarding **claim 4**, McGarrahan et al. and Kuh discloses everything claimed as applied above (*see claim 3*). Kuh discloses the PSIP converter, wherein the PSIP/PSI table generator transmits the digital cable broadcasting PSIP data to a PSIP server through a predetermined network so that the digital cable broadcasting PSIP data are included in the digital cable SI data and transmitted to a subscriber, the PSIP server transmitting digital cable SI data to the subscriber through an out-of-band channel (see cited portion, but not limited to col. 2, lines 66-67, col. 3, lines 1-25).

Regarding **claim 5**, McGarrahan et al. and Kuh discloses everything claimed as applied above (*see claim 3*). Kuh discloses the PSIP converter, further comprising:

a TS data receiver for receiving the terrestrial broadcasting PSIP/PSI data or the satellite broadcasting SI/PSI data from the protocol data extractor (see cited portion, but not limited to col. 4, lines 29-46, figs 2, 3); and

a TS packet data generator for configuring the digital cable broadcasting PSIP/PSI table generated by the PSIP/PSI table generator into MPEG-2 TS packets, and transmitting them to the protocol data inserter (see cited portion, but not limited to

col. 4, lines 11-20).

Regarding **claim 6**, McGarrahan et al. discloses a program and system information protocol (PSIP) conversion method for selectively receiving a digital terrestrial broadcasting transport stream (TS) or a digital satellite broadcasting TS, converting them into a corresponding digital cable broadcasting TS, and outputting the same, comprising (see cited portion, but not limited to paragraph 0009):

(a) receiving a program information description (PID) needed for analyzing the terrestrial broadcasting TS or the satellite broadcasting TS (see cited portion, but not limited to paragraph 0032, lines 1-3 (terrestrial broadcasting TS)), information needed for protocol conversion (see cited portion, but not limited to paragraph 0029), and data for other controls from a user (see cited portion, but not limited to paragraph 0057);

(b) converting the terrestrial broadcasting TS or the satellite broadcasting TS into an internally processed bit rate format (see cited portion, but not limited to paragraph 0037 (satellite broadcasting TS, 104));

(c) filtering the converted terrestrial broadcasting TS or the satellite broadcasting TS using the PID to extract A/V data and data from the terrestrial broadcasting TS and extract A/V data and data from the satellite broadcasting TS (see cited portion, but not limited to paragraph 0032, lines 1-7).

However, McGarrahan et al. fails to specifically disclose PSIP, (d) analyzing the extracted PSIP/PSI data or the SI/PSI data to generate the corresponding digital cable broadcasting PSIP/PSI data; and (e)



Art Unit: 2623

receiving the digital cable broadcasting PSIP/PSI data in (d) and the extracted A/V data in (c), performing TS multiplexing on them, and outputting them in the digital cable broadcasting TS.

Kuh discloses PSIP/PSI (see cited portion, but not limited to col. 4, lines 8-20, col. 5, lines 17-32),

(d) analyzing the extracted PSIP/PSI data or the SI/PSI data to generate the corresponding digital cable broadcasting PSIP/PSI data (see cited portion, but not limited to col. 5, lines 17-32); and

(e) receiving the digital cable broadcasting PSIP/PSI data in (d) and the extracted A/V data in (c), performing TS multiplexing on them, and outputting them in the digital cable broadcasting TS (see cited portion, but not limited to col. 5, lines 52-66, col. 6, lines 1-9 and fig 5).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify McGarrahan et al.'s invention with the above mentioned limitation as taught by Kuh for the advantage of properly reflecting a new transmit carrier frequency and channel number, thus preventing tuning problems with some digital television receivers due to incorrect PSIP table information and also for the advantage of maintaining the out-of-band service information.

Regarding **claim 7**, McGarrahan et al. and Kuh discloses everything claimed as applied above (*see claim 6*). Kuh discloses the PSIP conversion method, further comprising:

including the digital cable broadcasting PSIP data in (d) in the digital cable SI data transmitted to a subscriber through an out-of-band channel, and transmitting them to the subscriber (see cited portion, but not limited to fig 6, col. 6, lines 26-45, data is being transmitted to the subscribers at different frequencies ( $f_0$ ,  $f_1$  and  $f_2$ )).

Regarding **claim 9**, McGarrah et al. discloses a digital cable television broadcasting system for selectively receiving digital terrestrial broadcasting or digital satellite television broadcasting and linking the same to a digital cable broadcasting network in real-time, comprising (see cited portion, but not limited to paragraph 0009):

a plurality of first and second broadcasting signal demodulators for demodulating the digital terrestrial broadcasting signals and the digital satellite television broadcasting signals, respectively, and outputting them in terrestrial broadcasting transport streams (TS) and satellite broadcasting TS, respectively (see cited portion, but not limited to paragraph 0027, lines 12-16 (terrestrial), paragraph 0046 (satellite)).

However, McGarrah et al. fails to specifically disclose a plurality of first and second\_program and system information protocol (PSIP) converters for analyzing the terrestrial broadcasting TS and the satellite broadcasting TS output by the broadcasting signal demodulators, respectively, converting a terrestrial broadcasting PSIP/PSI table and a satellite television broadcasting SI/PSI table for transmitting program and system information into PSIP/PSI tables of a corresponding digital cable television broadcasting standard, respectively, and outputting a cable broadcasting TS;

a plurality of broadcasting signal modulators for modulating the cable broadcasting TS output by the PSIP converters;

a plurality of up-converters for converting the cable broadcasting TS modulated by the broadcasting signal modulators into radio frequency (RF) signals; and

a mixer for mixing the cable broadcasting TS converted by the up-converters, and outputting them to a cable connected to a subscriber.

Kuh discloses a plurality of first and second program and system information protocol (PSIP) converters for analyzing the terrestrial broadcasting TS and the satellite broadcasting TS output by the broadcasting signal demodulators, respectively, converting a terrestrial broadcasting PSIP/PSI table and a satellite television broadcasting SI/PSI table for transmitting program and system information into PSIP/F'SI tables of a corresponding digital cable television broadcasting standard, respectively, and outputting a cable broadcasting TS (see cited portion, but not limited to col. 4, lines 4-20 (satellite), col. 5, lines 3-5 (terrestrial));

a plurality of broadcasting signal modulators for modulating the cable broadcasting TS output by the PSIP converters (see cited portion, but not limited to col. 5, lines 33-51);

a plurality of up-converters for converting the cable broadcasting TS modulated by the broadcasting signal modulators into radio frequency (RF) signals (see cited portion, but not limited to col. 1, lines 52-52, col. 5, lines 8-16); and

a mixer for mixing the cable broadcasting TS converted by the up-converters, and outputting them to a cable connected to a subscriber (see cited portion, but not limited to fig 5 (28), col. 5, lines 58-61).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify McGarrahan et al.'s invention with the above mentioned limitation as taught by Kuh for the advantage of properly reflecting a new transmit carrier frequency and channel number, thus preventing tuning problems with some digital television receivers due to incorrect PSIP table information and also for the advantage of maintaining the out-of-band service information.

Regarding **claim 10**, McGarrahan et al. and Kuh discloses everything claimed as applied above (see *claim 9*). McGarrahan et al. discloses the digital cable television broadcasting system, further comprising:

a terrestrial broadcasting antenna for receiving the digital terrestrial broadcasting and outputting corresponding broadcasting signals to the first broadcasting signal demodulator (see cited portion, but not limited to paragraph 0009, lines 1-11); and

a satellite broadcasting antenna for receiving the digital satellite television broadcasting and outputting corresponding broadcasting signals to the second broadcasting signal demodulator (see cited portion, but not limited to paragraph 0025, 0029-0030).

Regarding **claim 11**, McGarrah et al. and Kuh discloses everything claimed as applied above (*see claim 9*). Kuh discloses the digital cable television broadcasting system, further comprising:

a PSIP server for receiving digital cable PSIP table information generated by the PSIP converters, and including the same in digital cable SI data to be transmitted to an out-of- band channel (see cited portion, but not limited to col. 2, lines 66-67-col. 3, lines 1-25);

an out-of-band channel signal modulator for modulating the cable SI data generated by the PSIP server, and transmitting them to a subscriber through the out-of-band channel (see cited portion, but not limited to col. 4, lines 29-46, the PSIP server transmits the out-of-band channel (different channels) to the subscribers)); and

an out-of-band channel network controller for controlling the cable SI data transmitted to the out-of-band channel signal modulator from the PSIP server (see cited portion, but not limited to col. 4, lines 15-20, out-of-band channels are considered to be the major and minor channel numbers).

Regarding **claim 12**, McGarrah et al. and Kuh discloses everything claimed as applied above (*see claim 9*). McGarrah et al. discloses the digital cable television broadcasting system, wherein the converter comprises:

a protocol data extractor for demultiplexing the terrestrial broadcasting TS and extracting audio/video (A/V) data and data from the terrestrial broadcasting TS (see cited portion, but not limited to paragraph 0032, lines 1-7);

a protocol data converter for using the data extracted by the protocol data extractor to generate data of a corresponding digital cable television broadcasting standard (see cited portion, but not limited to paragraph 0062, lines 37-46);

a protocol data inserter for inserting the data generated by the protocol data converter into the A/V data extracted by the protocol data extractor through TS multiplexing, and generating digital cable broadcasting TS see cited portion, but not limited to paragraph 0028).

Kuh discloses PSIP/PSI (see cited portion, but not limited to col. 4, lines 8-20, col. 5, lines 17-32), a system controller for checking states of the protocol data extractor, the protocol data converter and the protocol data inserter, and controlling their operation (see cited portion, but not limited to col. 4, lines 57-col. 5, line 2) and a first converter (see fig 1).

Regarding **claim 13**, McGarrah et al. and Kuh discloses everything claimed as applied above (*see claim 9*). Kuh discloses the digital cable television broadcasting system, wherein the second PSIP converter comprises:

a protocol data extractor for demultiplexing the satellite broadcasting TS and extracting A/V data and SI/PSI data from the satellite broadcasting TS (see cited portion, but not limited to col. 5, lines 17-24),

a system controller for checking and controlling the protocol data extractor, the protocol data converter, and the protocol data inserter (see cited portion, but not limited to col. 4, lines 57-col. 5, line 2).

McGarrahan et al. discloses a protocol data converter for using the SI/PSI data extracted by the protocol data extractor to generate PSIP/PSI data of a corresponding digital cable television broadcasting standard (see cited portion, but not limited to paragraph 0062, lines 37-46);

a protocol data inserter for inserting the PSIP/PSI data generated by the protocol data converter into the A/V data extracted by the protocol data extractor through TS multiplexing, and generating digital cable broadcasting TS (see cited portion, but not limited to paragraph 0028).

8. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over McGarrahan et al. (U.S. Publication No. 2003/0026424) and Kuh (U.S. Patent No. 6,785,903) as applied to *claim 6* above, and further in view of Jung et al. (U.S. Patent No. 6,038,232).

Regarding **claim 8**, McGarrahan et al. and Kuh discloses everything claimed as applied above. However, McGarrahan et al. and Kuh fail to specifically disclose the multiplexing process in (e) comprises:

amending variations of a program clock reference (PCR), and converting the multiplexed TS according to an output bit rate.

Jung et al. discloses the multiplexing process in (e) comprises:

amending variations of a program clock reference (PCR), and converting the multiplexed TS according to an output bit rate (see col. 2, lines 3-10).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify McGarrahan et al. and Kuh's invention with the above mentioned limitation as taught by Jung et al. for the advantage of using the multiplexer to employ program map table and program association table buffers having simplified interface and using FIFO.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nnenna N. Ekpo whose telephone number is 571-270-1663. The examiner can normally be reached on Monday - Friday 7:30 AM-5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Pendleton can be reached on 571-272-7527. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Art Unit: 2623

NNE/nne

May 2, 2008.

/Brian T. Pendleton/

Supervisory Patent Examiner, Art Unit 2623